

REMARKS

Applicants request favorable reconsideration and allowance of the subject application in view of the preceding amendments and the following remarks.

The specification has been amended to place the subject application in better form. A new abstract has also been presented in accordance with preferred practice. Also, by separate paper, Applicants request approval to amend Figures 3, 5, and 7-9 to correct minor informalities and to label Figure 11 as -- PRIOR ART--. No new matter has been added by these changes.

Claims 1-13, 25, 26, 34, 35, and 38-53 are presented for consideration. Claims 1, 9, 34 and 47 are independent. Claims 14-24, 27-33, 36 and 37 have been canceled without prejudice or disclaimer. Claims 1, 7, 9, 12, 13, 25, 26, 34, 42, 46, 47, 50 and 51 have been amended to clarify features of the subject invention, while claims 52 and 53 have been added to recite additional features of the invention. Support for these changes and claims can be found in the application, as filed. Therefore, no new matter has been added.

Applicants request favorable reconsideration and withdrawal of the objection and rejections set forth in the above-noted Office Action.

Applicants note with appreciation that claims 9 and 47 have been indicated as containing allowable subject matter and would be allowed if rewritten in independent form. To expedite prosecution, claims 9 and 47 have been so amended. Therefore, Applicants submit that these claims, as well as claims 25, 26, 52 and 53, respectively depending therefrom, should be deemed allowable at the outset. In addition to these claims being allowable, Applicants submit that the remaining claims should be deemed allowable as well.

Claims 7, 20, 29, 36, 37 and 46 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. The Examiner objected to specific recitations in these claims. To expedite prosecution, Applicants have amended claims 7 and 46 in light of the Examiner's comments and have canceled claims 20, 29, 36 and 37 without prejudice or disclaimer. Applicants submit that these changes overcome this rejection. Such favorable indication is requested.

Turning now to the art rejections, claims 1-8, 10-21, 23-46 and 48-51 were rejected under 35 U.S.C. § 103 as being unpatentable over Applicants' background statement with respect to Figure 11 in view of U.S. Patent No. 6,118,599 to Spinali. Applicants submit that the cited art does not teach many features of the present invention as previously recited in these claims. Therefore, this rejection is respectfully traversed. Nevertheless, Applicants submit that independent claims 1 and 34, for example, as presented, amplify the distinctions between the present invention and the cited art.

In one aspect of the invention, independent claim 1 recites a supporting structure for supporting an optical element. The supporting structure includes a first supporting member for supporting the optical element, a second supporting member arranged in an outer diameter side of the first supporting member for supporting the first supporting member, and an elastic member placed between the first supporting member and the second supporting member in the radial direction of the optical element, an inner diameter side of the elastic member being connected to the first supporting member while an outer diameter side of the elastic member being connected to the second supporting member, and the elastic member being elastically deformable in the radial direction.

In another aspect of the invention, independent claim 34 recites a supporting structure for supporting an optical element. The supporting structure includes a plurality of optical elements, a plurality of first supporting members for respectively supporting the plurality of optical elements, and a plurality of second supporting members for respectively supporting the plurality of first supporting members via structures having elasticity in a radial direction of the optical element.

By such an arrangement, in the present invention, the force from the elastic member will not be directly transmitted to the optical elements. This prevents deformation of the surface of the optical element or reduces the amount of deformation due to direct addition of the force to the optical element. Accordingly, in the present invention, the elastic member can be placed between the first and second supporting members to achieve these advantages.

Applicants submit that the cited art does not teach or suggest such features of the present invention, as recited in independent claims 1 and 34.

Applicants background statement with respect to Figure 11 of the subject application discusses an arrangement that includes lens 101, a first supporting member 103 and a second supporting member 105. Applicants submit, however, that this discussion is silent with respect to any elastic member as in the present invention recited in independent claims 1 and 34. Accordingly, Applicants submit that their background statement with respect to Figure 11 does not teach or suggest the salient features of the present invention, as recited in these independent claims.

Applicants further submit that the remaining art cited does not cure the deficiencies noted above with respect to their background statement.

The Spinali patent teaches a barrel 220 and a connecting barrel member 216 having a plurality of spacing members 218 for supporting lenses 208. Applicants submit, however, that the Spinali patent, as with their background statement, does not teach or suggest anything regarding an elastic member, as in the present invention recited in independent claims 1 and 34. Applicants submit, therefore, that the Spinali patent adds nothing to the teachings of Applicants' background statement that would render obvious Applicants's present invention recited in those independent claims.

Still further, Applicants submit that the art cited in the accompanying disclosure statement does not teach or suggest the salient features of Applicants' present invention.

Specifically, Japanese patent document 11-149029 describes an elastic seat 3. That seat, however, directly supports an optical element and is not placed between first and second supporting members. Further, that seat has an elasticity only in the Z-direction. Namely, it has elasticity only in the direction of the optical axis, and does not have elasticity in the radial direction of the optical element.

Still further, U.S. Patent No. 5,488,514 discloses flexible fingers 26 for directly supporting a lens. This patent discusses that, with regard to the fingers, the free or distal ends of the fingers 26 can twist and move radially relative to the annulus 30. See column 4, lines 63-67, in that patent. Applicants submit, however, that the flexible fingers directly support a lens and are not placed between first and second supporting members.

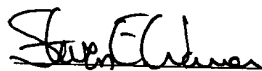
For the foregoing reasons, Applicants submit that the present invention, as recited in independent claims 1 and 34, also is patentably defined over the cited art, whether that art is taken individually or in combination.

The dependent claims also should be deemed allowable, in their own right, for defining other patentable features of the present invention in addition to those recited in their respective independent claims. Further individual consideration of these dependent claims is requested.

Applicants further submit that the instant application is in condition for allowance. Favorable reconsideration, withdrawal of the objection and rejections set forth in the above-noted Office Action and an early Notice of Allowance are requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should be directed to our address listed below.

Respectfully submitted,



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